DOCUMENT RESUME

ED 339 259 HE 023 329

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TITLE Effects of Teaching Learning Strategies with Course Content.
SPONS AGENCY Southwest Texas State Univ., San Marcos.
PUB DATE Apr 89
NOTE 15p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Freshmen; Course Content; Higher Education; *Instructional Effectiveness; *Integrated Activities; *Learning Strategies; State Universities; Student Attitudes; *Study Habits

ABSTRACT

The study reported in this paper examined the effects of teaching learning strategies integrated with courses content on the study habits, attitudes, and mastery of course content of 122 students. Students enrolled in the experimental section of a freshman level course were taught learning strategies and course content; students in another section were taught only course content. Students in two control groups were taught neither. The learning strategies instruction covered use of library resources, study guides, note-taking, time management techniques, and summarization procedures. Analyses of pre-test scores on the "Survey of Study Habits and Attitudes" and a course content test indicated no differences among the groups. Analyses of post-test scores indicated that students in the experimental group scored significantly better than students from the other groups on mastery of course content and study habits. No significant differences were found among the four groups in study attitudes. It is concluded that teaching learning strategies with course content improves both study habits and mastery of course content. (12 references) (Author/JDD)

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ED309259

Effects of Teaching Learning Strategies with Course Contents

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April 1989

*The work reported herein was supported by Southwest Texas State University.

Organized Research Grant #21180

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AE023329

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Abstract

This study examined the effects of teaching learning strategies integrated with course content on the study habits and attitudes and mastery of course content of 122 students. Students enrolled in the experimental section of a freshman level course were taught learning strategies and course content; students in another section were taught only course content. Students in two control groups were taught neither. Analyses of pretest scores on the Survey of Study Habits and Attitudes, and a Course Content test indicated no differences among the groups. Analyses of post-test scores indicated that students in the experimental group scored significantly better than students from the other groups on mastery of course content and study habits. The authors conclude that teaching learning strategies with course content improves both study habits and mastery of course content.

The Effects of Teaching Learning Strategies with Course Content

In 1983 the National Commission on Excellence concluded that "many students complete high school and enter college without disciplined and systematic study habits" (p. 49). A recent survey of colleges and universities in 15 states ("Colleges Survey", 1988) revealed that 35.7 percent of the freshmen entering the schools surveyed need remedial help in order to do college-level work. In many states (e.g., Florida, New Jersey, Texas) incoming freshmen must now be tested in math, writing, and reading/study skills to determine if they are prepared for college-level work, and remediation provided to those who are not.

The terms "study skills" and "learning strategies" refer to a variety of behaviors that learners consciously invoke to increase the comprehension and retention of information (e.g., outlining, summarizing, using the SQ3R procedure, comprehension monitoring, noting the organizational structure of a passage, self-questioning). These strategies for learning how to learn and how to regulate one's own learning can be taught, and the use of these strategies enhances overall student achievement (Long & Long, 1987).

At the postsecondary level helping students acquire independent learning strategies generally takes one of three forms. First, colleges and universities offer assistance through learning centers or schedule general learning strategies courses. Second, colleges and universities provide adjunct or supplemental learning strategies courses that parallel content courses (McMurtrie, 1982; Wolfe, 1987). These courses provide instruction in learning

strategies independent of, but pertinent to, specific content courses. The third and least common form in which colleges and universities help students acquire independent learning strategies is to integrate or merge instruction in these strategies with academic course content.

If learning strategies are taught when students need them for an academic class assignment, students perceive the strategies as useful and continue to use them (Goetz & Palmer, 1984). Teacher-directed instruction of these strategies in adjunct courses or integrated with academic course content facilitates student learning of and continued use of these learning strategies (Long & Long, 1987; Olson & Gillis, 1983). But how does taking time to teach learning strategies in content classes affect student mastery of course content?

This study sought to answer the following questions: (a) Do students who are taught learning strategies in a content course learn significantly more course content than students who are taught only course content, and (b) Do students who are taught learning strategies in a content course significantly improve their study habits and attitudes as opposed to students who are not taught learning strategies?

Method

Subjects

The subjects were 122 undergraduates enrolled in four sections of a freshman level course at a central Texas university. Subjects selected the section of the course they wanted at registration without knowledge about how the sections would differ. The four groups were randomly designated as: (a) treatment group 1 (the

experimental group) whose members were taught learning strategies integrated with course content; (b) treatment group 2 whose members were taught course content but not learning strategies; and (c) groups 3 & 4 (control groups) whose members worked in public schools as aides and were taught neither course content nor learning strategies. All students had declared education as a major and reading as a specialization. The "Fundamentals of Reading" course in which they were enrolled is the first course in the reading specialization.

Materials

Groups 1 & 2 were assigned readings from professional journals, research reports, and portions of texts augmenting course lectures. Group 1, the experimental group, also used study guides created for each reading assignment and handouts outlining and illustrating the learning strategies taught in class. Structured overviews were used to introduce course topic to this group. The Study Habits and Study Attitudes subtests of the Survey of Study Habits and Attitudes, Form C (Brown & Holtzman, 1967) and an author-designed multiple-choice Course Content test with 60 items were used for pre- and post-testing of all groups.

Procedures

The two treatment groups attended a standard lecture-based college class entitled, "Fundamentals of Reading," taught by the authors. This was a content class, not a reading improvement or teaching methods class. It covered such topics as theoretical models of the reading process, characteristics of good and poor readers, history and types of children's literature, and the history of American reading instruction. The instructional

procedures used with the two treatment groups were typical methods used in a lecture-based class. However, for group 1, the experimental group, the following procedures designed to improve students' learning and independent study or learning strategies were implemented:

1. The instructor accompanied students to the library to show them how to use the resources needed to complete specific course assignments when assignments were made.
2. Students used a study guide to accompany each reading assignment. The guides focused on important points in the reading and helped students to realize the structure of the text. Guides were due and discussed the class period after assignment. Most guides were collected, graded, and returned to students with written comments.
3. Students learned to take notes using the Cornell method (Pauk, 1974) and used that strategy in class. They were also learned how to use these notes to prepare for quizzes and exams.
4. Students learned time-management techniques, such as making weekly study schedules.
5. When a major course project was assigned, students analyzed project tasks and set deadlines for the completion of each task.
6. Students kept a notebook containing class notes, handouts, etc. This notebook was checked for content and organization every five weeks.
7. The instructor taught important concepts and vocabulary, relating the terms to prior topics and prior experiences

to introduce new topics, using structured overviews (Herber, 1978).

8. Students learned a five-step summarization procedure (Day, 1980). They summarized three readings. The instructor returned the summaries with specific written comments about student mastery of the summarization procedure and a grade.

9. The content of the course determined the learning strategies taught. The instructor taught the learning strategies needed to succeed in a particular assignment when they were needed. The instructor told when and how effective learners use each strategy, and noted other courses in the required curriculum in which each strategy might be useful.

Groups 3 & 4, the control groups, were supervised by a colleague and worked as aides during primary reading classes in a public school.

Results

One-way analyses of variance conducted on pretest scores in order to determine if there were any initial differences among the four groups indicated that there were no significant differences initially among the four groups. Analyses of covariance on post-test scores, using the pretest score as the covariant in each case, revealed significant differences among groups on the Course Content post-test raw scores ($F_{3,119}=64.57$, $p < .0001$) and the percentile scores for the Study Habits and Study Attitudes subtests of the Survey of Study Habits and Attitudes ($F_{3,119}=3.47$, $p < .02$; $F_{3,116}=2.76$, $p < .05$, respectively). These results are shown in Tables

1, 2, & and 3.

INSERT TABLES 1, 2, AND 3 HERE

Since the analyses of covariance indicated significant main effects, Duncan's Multiple Range tests were used post hoc. These tests revealed that the mean scores of group 1, the experimental group, were significantly higher than the mean scores of the other three groups on the Course Content post-test ($p < .01$) and the Study Habits subtest of the Survey of Study Habits and Attitudes ($p < .05$). They revealed no significant differences among the groups on the posttest means for the Study Attitudes subtest of the Survey of Study Habits and Attitudes.

Discussion

The first research question asked whether students who were taught learning strategies in a content course would learn significantly more course content than students who were taught only course content. The analyses of the course Content test posttest scores indicted that group 1, the experimental group, significantly outscored groups 3 & 4, the two control groups, which had received no instruction. More importantly, these analyses showed that group 1 significantly outscored group 2, the other treatment group, which had received instruction only in the course content. Teaching learning strategies as needed in the content course enhanced students' learning of the course content. These data suggest that educators can increase student mastery of course content by designing their courses to include the teaching of appropriate learning strategies.

The second research question asked about the effects of teaching learning strategies in a content course upon student study habits and study attitudes. Analyses of posttest scores showed main effects for both study habits and study attitudes. The results of the post hoc analyses showed that there were no significant differences among the four groups in study attitudes, but that group 1, the experimental group, reported significantly better study habits than the other three groups.

In other words, the attitudes of the student population in all of the groups were generally the same toward school and study. However, the experimental groups' self-reported study habits - which had been the same as the other groups at the beginning for the study - were significantly better than those of the other groups at the end of the semester. Teaching learning strategies as needed for an academic class assignment apparently helped students to perceive these strategies as useful and to incorporate them into their repertoire of study behaviors. Considered together, these data indicate that a group of students may have similar attitudes toward study, education, and schooling, but students who are taught learning strategies and how and when to apply them integrated in a content class will make significant changes in their study habits. When considered with the significant course content results, the data suggest that educators can simultaneously increase student mastery of course content and improve study habits.

Student feedback during and after the course revealed that students in group 1, the experimental group, believed they had learned a great deal about how to study. They also reported using

the strategies in other classes. This feedback, like the significant results on the test of study habits, further confirms previous research (Goetz & Palmer, 1984; Olson & Gillis, 1983) indicating that teaching learning strategies when students need them for an academic class assignment results in changes in student study behaviors.

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Table 1

Analysis of Covariance for Course Content Post-test Scores

Source	SS	df	MS	F	p
Covariate	934.21	1			
Between	5231.32	3	1743.77	64.57	.0001
Within	2889.54	107	27.01		
TOTAL	9055.06	111*			

* 11 of the original participants did not take the post-test.

Table 2

Analysis of Covariance for Study Habits Post-test Scores

Source	SS	df	MS	F	p
Covariate	43453.83	1			
Between	4818.17	3	1606.06	3.47	.02
Within	53727.36	116	463.17		
TOTAL	101999.36	120			

Table 3

Analysis of Covariance for Study Attitudes Post-test Scores

Source	SS	df	MS	F	p
Covariate	39755.83	1			
Between	3791.65	3	1263.89	2.76	.05
Within	53146.48	116	458.16		
TOTAL	96693.96	120			